WHAT IS CLAIMED IS:

1. An apparatus for manufacturing a dry sheet from a slurry, comprising:

a coating section which coats a slurry raw material to be formed into a sheet, onto a carrier film transferred along a predetermined route;

a thickness-adjusting device which adjusts the thickness of the coating of the slurry raw material disposed on the carrier film;

a drying section which dries the slurry raw material disposed on the carrier film to form a sheet;

a property-measuring device which measures a predetermined property, related to the coating thickness of the slurry raw material disposed on the carrier film, in a wet mode before the material is dried in the drying section;

a density-measuring instrument which measures the density of the slurry raw material;

a memory section for storing data representative of a relation among the wet-mode measurement of the property of the slurry raw material disposed on the carrier film, the density of the slurry raw material, and the final thickness of the sheet obtained after the slurry raw material is dried;

an operational section which estimates a sheet thickness on the basis of the data stored in the memory section, the value of the property of the slurry raw material measured by the property-measuring device, and the density of the slurry raw material, and compares the estimated value with a target value of the sheet thickness; and

an output adjusting section which transmits thickness-adjusting signals to the thickness-adjusting device in response to the comparison result obtained in the operational section.

2. The apparatus for manufacturing a sheet according to Claim 1, wherein the property includes a radiation attenuation amount, and the property-measuring device includes a radiation thickness gauge which applies radiation to the slurry raw material in the thickness direction of the slurry raw material.

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3. The apparatus for manufacturing a sheet according to Claim 1 or 2, wherein the thickness-adjusting device includes a slurry-discharging device for feeding a controlled amount of the slurry raw material to the coating section in response to the thickness-adjusting signals.

4. The apparatus for manufacturing a sheet according to Claim 1 or 2, wherein the coating section includes a slurry coater and a backing roll which is arranged face to face with the slurry coater with an adjustable gap therebetween, the slurry coater being responsive to the thickness-adjusting signals and thereby functioning as said thickness-adjusting device.

5. The apparatus for manufacturing a sheet according to Claim 1, wherein the density-measuring instrument for measuring the density of the slurry raw material is placed near at least one of a storing section where the slurry raw material is stored, or a channel through which the slurry raw material is fed.

6. The apparatus for manufacturing a sheet according to Claim 1, wherein t, an estimated value of the final thickness of the sheet obtained after drying the slurry raw material on the carrier film, is determined according to the following equation (1):

$$t = (W - c) / K2 \tag{1}$$

where W represents an area weight obtained by converting a measurement of the property of the slurry raw material, before drying, disposed on the carrier film, into the area weight of a predetermined material with the same measurement of the property as the above; c represents an area weight obtained by converting a measurement of a property of the carrier film only, measured in the same manner as the slurry raw material on the carrier film, into the area weight of the predetermined material with the same measurement of the property as the above; and K2 represents a conversion coefficient determined by the following equation (2):

$$K2 = (h \times G) + k \tag{2}$$

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where h represents a correction coefficient and k represents a correcting standard value, both of which are determined according to the target thickness T of the sheet, and G represents the density of the slurry raw material.

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